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June 14, 2002

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California Energy Commission  
1516 Ninth Street  
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02-025-1  
CALIF ENERGY COMMISSION

JUN 18 2002

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Dear Mazi / Gary:

As we previously discussed, the June 18 workshop on Outdoor Lighting conflicts with an IESNA regional conference and therefore I am unable to attend the workshop. The following are comments from the Acuity Brands business units.

At the March workshop I had indicated that the scope of the CEC Outdoor Lighting Measures was extremely broad and the schedule was very aggressive. Given that the CEC has never addressed outdoor lighting applications, I reiterate my concerns with regard to this process. The Commission is attempting to address an extremely broad issue over the course of seven months. The ASHRAE/IESNA 90.1 process took several years to develop and verify the models. I think it is unrealistic to expect that the CEC will be able to develop all the supporting models, verify the data analysis, develop meaningful recommendations and obtain input from all stakeholders within this timeframe.

In theory, we believe the "Lighting Zones" can be a useful concept for lighting standards. They provide flexibility to set guidelines based on different objectives within each zone. However, there are a number of concerns and issues related to how these zones would be defined and revised as population densities change. There are also concerns with regard to the restrictions on the size of LZ4. This may impose unreasonable restrictions on small municipalities that place an emphasis on historic or decorative themes.

I have previously requested that the CEC provide specific information regarding the models used to support the proposed measures. I had expected to see tables that would identify each supporting analysis, the assumptions, the specific optical distribution and the resulting application performance for that analysis. The CEC report includes some data regarding some calculation models, but there is insufficient information to evaluate the breadth and variety of the models, how well they correspond to good lighting practice, or the specifics of the optical distribution of the luminaires used in the models. With the inconsistencies in which the models are reported for each measure in the report, it is very difficult to substantiate whether the proposed LPD values are reasonable. Given the short timeframe for review and comment, we are unable to develop our own models to evaluate the proposed LPD values.

For Measure 2 – Parking Lot Lighting, it appears that no lamps over 250W were evaluated in the model. The illuminance values listed in table 7, page 18 do not correspond to the IESNA RP-20 nor RP-33 guidelines. RP-20 contains

recommendations for basic and enhanced security illuminance levels that do not seem to be addressed in the CEC report. The design criterion does not seem to be substantiated. The report indicates that the minimum occurs in the middle of a grid of four poles. Our experience confirms that the minimum occurs around the edges of the site. The CEC model is based on a representative section in the middle of the site. Therefore the minimum illuminance and uniformity values are not representative.

The Outdoor Sales Canopy measure appears to be based entirely on a model for gas stations, however recommendations are made for other covered outdoor sales. There is no data in the report that shows the results of the performance of the model and there is no data to support the recommendations for other covered outdoor sales applications.

I am confused about whether cutoff criteria is part of the recommendation for the measures. Page 4 indicates, "For most applications, only cutoff luminaires are allowed." However I did not see any reference to cutoff criteria in any of the measures. Our company supports the use of cutoff and full-cutoff optical systems, especially in areas where high angle brightness needs to be controlled. However, many outdoor measures covered by this report can be designed effectively with semi-cutoff or non-cutoff luminaires that utilize quality optical systems. There are semi-cutoff and non-cutoff optics that produce less than 2% uplight. In addition, high angle beam distributions maximize pole spacing and can reduce the overall LPD. Therefore the energy code should recognize the value of these types of optics in reducing overall energy for certain applications. There are a number of incorrect statements in the report related to optics. For instance a reference to vertical lamp optics indicates, "the glare produced by this luminaire type is generally unacceptable". There are flat lens vertical optics technologies available that do not produce unacceptable glare. It also states that "Most of these globes or acorns have poor optics, are energy inefficient, and are a significant source of glare, light trespass, and light pollution, which make them unacceptable for use." This statement is simply incorrect and limits manufacturer's ability to promote superior technologies. Many globes and acorns are designed with internal reflectors or refractors and are very effective while consuming less energy. Furthermore, the statements regarding high mast lighting in the roadway measure are not accurate and do not reflect the results from numerous papers published by IESNA.

Once again, I would request that the Commission reconsider the scope of their measures, provide the data for the supporting models and develop a reasonable schedule that will allow time for the public to evaluate and comment on the proposed measures. We support effective lighting and will continue to work closely with the Commission, however we believe this issue is too critical and too complex to be developed in just a few months.

Best regards,



Cheryl English

Vice President, Technical Marketing Services